CLAIMS

SUBAD

1. In a heterodyne receiver having more than one
predetermined selectable receive frequency and having at
5 least one intermediate frequency (IF) circuit capable of
operation on at least two predetermined intermediate
frequencies, a method of selecting one of the at least two
predetermined intermediate frequencies, comprising the
steps of:
10   (a) selecting one of the more than one
predetermined selectable receive frequency; and
        (b) selecting at least one of the at least two
predetermined intermediate frequencies for each of the at
least one IF circuit in response to the selected one of the
15 more than one predetermined selectable receive frequency,
wherein the at least one of the at least two predetermined
intermediate frequencies for each of the at least one IF
circuit is selected to prevent the generation of any
undesirable spurious frequencies as a result of mixing the
20 selected one of the more than one predetermined selectable
receive frequency and the selected at least one of the at
least two predetermined intermediate frequencies.

2. The method according to claim 1 further comprising
25 the step of (c) causing each of the at least one IF circuit
to operate on the operating IF selected for each of the at
least one IF circuit.

3. The method according to claim 2 wherein the step
30 (c) comprises the step of (d) programming at least one
programmable frequency generator.

4. The method according to claim 2 wherein the step
(c) comprises the step of (e) selecting at least one
35 frequency determining device.

5.   The method according to claim 2 wherein the step
(c) comprises the step of (f) programming the operating
frequency of at least one programmable filter circuit.

5   6.   The method according to claim 2 wherein the step
(c) comprises the step of (g) selecting at least one filter
circuit, the at least one filter circuit having an
operating frequency compatible with the operating IF
selected for each of the at least one IF circuit.

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7.   The method according to claim 1 further comprising
the step of (h) preprogramming a database with possible
combinations of the more than one predetermined selectable
receive frequency and the at least two predetermined

15   intermediate frequencies for each of the at least one IF
circuit in a manner such that values within the database
indicate whether or not the combinations will generate one
or more undesirable spurious frequencies; and
        wherein the selecting step (b) comprises the steps

20   of:
        (i) searching the database entries associated
with the selected one of the more than one predetermined
selectable receive frequency;
        (j) determining from the database search at least

25   one of the at least two predetermined intermediate
frequencies for each of the at least one IF circuit,
wherein the determined one of the at least two
predetermined intermediate frequencies for each of the at
least one IF circuit in combination with the selected one

30   of the more than one predetermined selectable receive
frequency will not generate one or more undesirable
spurious frequencies; and
        (k) defining uniquely the at least one of the at
least two predetermined intermediate frequencies for each

35   of the at least one IF circuit, as determined in step (j),
to be the operating IF for the at least one IF circuit.

8.   The method according to claim 7 further comprising
the step of (1) causing each of the at least one IF circuit
to operate on the operating IF defined for each of the at
least one IF circuit.

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9.   The method according to claim 7 further comprising
the step of (m) preselecting a default IF for each of the
at least one IF circuit; and
          wherein the searching step (i) comprises the step
10   of (n) searching only those entries within the database
that are relevant to both the selected one of the more than
one predetermined selectable receive frequency and to each
preselected default intermediate frequency, and
          wherein the defining step (k) comprises the steps
15   of:
          (o) defining the operating IF for each of the at
least one IF circuit to be the preselected default IF for
each of the at least one IF circuit, in response to the
determination that the preselected default IF for each of
20   the at least one IF circuit in combination with the
selected one of the more than one predetermined selectable
receive frequency will not generate one or more undesirable
spurious frequencies; and
          (p) defining the operating IF for each of the at
25   least one IF circuit to be one of the at least two
predetermined intermediate frequencies that is different
from the preselected default IF for each of the at least
one IF circuit, in response to the determination that the
preselected default IF for each of the at least one IF
30   circuit in combination with the selected one of the more
than one predetermined selectable receive frequency will
generate one or more undesirable spurious frequencies.

10.   The method according to claim 8 wherein the step
35   (1) comprises the step of (q) programming at least one
programmable frequency generator.

11. The method according to claim 8 wherein the step (1) comprises the step of (r) programming the operating frequency of at least one programmable filter circuit.

5   12. A heterodyne receiver for receiving radio frequency signals comprising:

receive frequency selection means for selecting more than one predetermined selectable receive frequency;

controller means coupled to the receive frequency

10   selection means for controlling the heterodyne receiver in response to the selected one of the more than one predetermined selectable receive frequency; and

intermediate frequency (IF) circuit means coupled to the controller means and having at least two

15   predetermined intermediate frequencies of operation; and wherein the controller means comprises:

IF selection means for selecting at least one of the at least two predetermined intermediate frequencies of operation; and

20   spurious frequency prevention means coupled to the IF selection means for preventing the selection of any intermediate frequencies that will generate one or more undesirable spurious frequencies when mixed with the selected one of the more than one predetermined selectable

25   receive frequency.

13. The heterodyne receiver according to claim 12 wherein the spurious frequency prevention means comprises a memory means comprising a preprogrammed database,

5   wherein the database comprises a plurality of values defining possible combinations of the more than one predetermined selectable receive frequency and the at least two predetermined intermediate frequencies of operation, each of the plurality of values further indicating whether

10   or not the combination will generate one or more undesirable spurious frequencies, and

              wherein the IF selection means comprises logical elements to prevent selection of any combinations of IF and the selected one of the more than one predetermined

15   selectable receive frequency if such combinations will generate one or more undesirable spurious frequencies when mixed together.

20   14. The heterodyne receiver according to claim 12 wherein the IF circuit means comprises a programmable frequency generator.

15. The heterodyne receiver according to claim 12 wherein the IF circuit means comprises a selectable

25   frequency determining device.

16. The heterodyne receiver according to claim 12 wherein the IF circuit means comprises a programmable IF filter circuit.

17. A selective call receiver comprising:

antenna means for accepting radio frequency (RF) signals comprising selective call information;

5   heterodyne receiver means coupled to the antenna means for receiving the RF signals comprising information and for demodulating the RF signals to derive the information;

receive frequency selection means for selecting

10   more than one predetermined selectable receive frequency;

intermediate frequency (IF) circuit means, the IF circuit means having at least two predetermined intermediate frequencies of operation; and

controller means coupled to the receive frequency

15   selection means and to the IF circuit means for controlling the heterodyne receiver in response to the selected one of the more than one predetermined selectable receive frequency, the controller means comprising:

IF selection means for selecting at least one of

20   the at least two predetermined intermediate frequencies of operation; and

spurious frequency prevention means coupled to the IF selection means for preventing the selection of any intermediate frequencies that will generate one or more

25   undesirable spurious frequencies when mixed with the selected one of the more than one predetermined selectable receive frequency.

18. The selective call receiver according to claim 17,
wherein the spurious frequency prevention means comprises a
memory means, the memory means including a preprogrammed

5   database, the database comprising a plurality of values
defining possible combinations of the more than one
predetermined selectable receive frequency and the at least
two predetermined intermediate frequencies of operation,
each of the values further indicating whether or not the

10   combination will generate one or more undesirable spurious
frequencies, and
        wherein the IF selection means will not select any
combinations of IF with the selected one of the more than
one predetermined selectable receive frequency if such

15   combinations will generate one or more undesirable spurious
frequencies when mixed together.

19. The selective call receiver according to claim 17,
wherein the IF circuit means comprises a programmable

20   frequency generator.

20. The selective call receiver according to claim 17,
wherein the IF circuit means comprises a programmable IF
filter circuit.

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